

ABSTRACT

The invention is the microcontroller, which comprises CPU, a bus controller, an instruction address bus of a first bit number 5 and an instruction code bus of a second bit number, which connect between the CPU and bus controller, and, further, a debug support unit, which is connected to the instruction address bus and instruction code bus. This debug support unit is also connected to an external in-circuit emulator via a tool bus of a third 10 bit number that is smaller than the first bit number and via a bus-status signal line that reports on the status of this tool bus. The debug support unit has a data output circuit, which, in response to the status information signal, when the branch information contains a branch, outputs the converted instruction 15 address serially to the tool bus, and when the branch information contains no branch, outputs a branchless signal to the tool bus.